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Schmelzer, Paul

Veröffentlichungsversion / Published Version
Zeitschriftenartikel / journal article

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Acta Sociologica 2011 54: 251
DOI: 10.1177/0001699311412626

Article

Acta Sociologica
54(3) 251–265

DOI: 10.1177/0001699311412626
asj.sagepub.com
SAGE

Unemployment in early career in the UK: A trap or a stepping stone?

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Abstract

In this article, I analyse the consequences of unemployment on the re-entry occupational status and subsequent occupational status growth of different educational groups in the first years of employment in the UK. I argue that phases of unemployment mean different things for different educational groups. The sequential nature of job offers causes job searchers either to accept a job offer immediately or to wait for the next offer. Higher aspirations and higher levels of savings mean that high-educated people are more likely to wait until they are offered a job that improves their occupational position. In the case of low-educated workers, however, waiting for a better job offer might not be the best strategy, because they might never get one; in addition, the low level of unemployment benefits from previous salaries, the regime of sanctions linked to the right to receive unemployment benefits and low household incomes push them into employment. I use growth curve models and parameterize in one model both the pre-unemployment and the post-unemployment phases. Based on British Household Panel Survey (BHPS) data, the results confirm my argumentation: high-educated people gain status while low-educated entrants lose status upon re-entering the labour market after unemployment.

Keywords

education, event history analysis, growth curve models, pull vs. push mechanism, scar effect of unemployment

Introduction

Unemployment is usually associated with a negative effect on one's post-unemployment career: unemployment increases the individual's future risk of again being unemployed and might leave a long-lasting scar on that person's wages (Arulampalam, 2001; Gangl, 2006). However, an unemployment phase might also have a positive impact on post-displacement wages. Indeed, there is some evidence of this from studies, mainly for Anglo-Saxon countries at the beginning of the employment career for wages (Kahn and Low, 1982; Antel, 1991; Abbring et al., 1998). While human capital and

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signalling theories predict wage losses due to unemployment, search and matching theories argue that an active job search, when unemployed, might lead to an improvement of post-unemployment wages (Kahn and Low, 1982). Though these theories have been formulated for wages, they are also helpful in explaining the occupational shifts at the beginning of the employment career in the UK.

Against the background of institutional settings in the UK, I argue that unemployment might have a different impact on different educational groups. Because vocational training is unstandardized, many job beginners start their first jobs in inadequate and precarious positions with the prospect of working their way up to better and more qualified positions (Oppenheimer and Kalmijn, 1995). Therefore, not only an on-the-job search but also an off-the-job search might be a good strategy by which to improve initial occupational positions. At the same time low unemployment benefits and a strong sanction regime in the UK expose unemployed workers to economic pressure to accept the arriving job offer regardless of its quality (Gangl, 2002b, 2006). Given these institutional settings I believe that search and matching theories on the one hand and human and capital theory on the other might have different implications for different educational groups. While search and matching theories might provide reasonable tools for explaining the outcomes for high-educated people, they are less appropriate for predicting outcomes for low-educated people. As they are aware of their productivity, high-educated individuals have high aspirations towards better occupational positions, which, combined with low economic pressure, might yield positive outcomes when searching off-the-job. In contrast, a strong sanction regime, low unemployment benefits and low household incomes increase the opportunity costs of job search for low-educated individuals, lowering their chances of improving poor starting occupational positions. Furthermore, because job-specific skills acquired on the job are important components of the human capital of low-educated workers, loss of a job is more punitive for them than it is for more highly educated people with more transferable skills. High-educated workers might also choose unemployment over a low-paid job as a means of signalling their productivity, while a prolonged job search for low-educated workers might be interpreted by employers not as a signal of their high aspirations, but of their low productivity. Thus human capital and signalling models might be more appropriate for predicting outcomes for low-educated people.

This article analyses the consequences of unemployment on the re-entry occupational status and subsequent occupational status growth of different educational groups in the first years of the employment career in the UK. The study contributes to the growing amount of literature on indirect job mobility in several aspects. First, many studies (mainly conducted by economists) do not take into account national institutions that structure labour markets, which might explain the contradictory results reported for different countries. In this study, therefore, I systematically embed my expectations within the institutional context of the UK. Secondly, most studies on this topic use a fixed effect estimator or propensity score matching approach and therefore are unable either to investigate the impact of unemployment on different educational groups or to tackle the mechanisms behind unemployment phases. However, I believe that the mechanisms behind unemployment at the beginning of the employment career are different for different educational groups. Thirdly, I focus on the early employment career, since unemployment at the beginning of the employment career might have a different meaning than in the later phases of the employment career. Indeed, unemployment episodes might be part of an ongoing matching process. Therefore, conclusions drawn from studies covering employment careers of workers of all ages are not readily transferable to the early stages of employment careers. Therefore, I use British Household Panel Survey (BHPS) and apply growth curve models with interrupted time series design to parameterize in one model both the pre-unemployment and the post-unemployment phases.

In the following I discuss in detail theories predicting outcomes of unemployment and, through embedding them in the institutional context of the UK, formulate hypotheses for different educational groups. For a broader understanding of unemployment I also briefly discuss the risk of unemployment and the chances of re-employment for different educational groups. Before presenting the results, I describe the data and statistical models and, finally, discuss and summarize the findings in the concluding section.

Theoretical framework

There is a large amount of sociological literature investigating how institutional settings structure the transition from education to the employment system. When explaining the speed of transition and the quality of the first job, two of the main institutional settings are employed: vocational specificity of the educational system and employment protection legislation (EPL) (Diprete et al., 2001; Gangl, 2004). While the apprenticeship system of the German-speaking countries (the 'dual system') creates a strong linkage between qualification skills and the demand side, this linkage in countries with more emphasis on general education and on-the-job training (e.g. the UK) is weak (Shavit and Müller, 1998). In recent years, many scientists have also emphasized the role of EPL on entering the labour market (Scherer, 2004; Wolbers, 2007). In a flexible labour market such as in Britain, the weak institutional linkage between the educational and employment systems does not have the same negative impact on the time spent between the educational and employment systems as in countries with strict EPL (Kurz et al., 2008). In contrast to labour markets with strong EPL, employers in labour markets with weak EPL apply screening strategies on the job to identify promising workers (Brauns et al., 1999). However, the downside of this is the negative impact on the quality of the first job (Wolbers, 2007). Since unstandardized on-the-job training prevails and screening strategies are common, many job beginners start their first jobs in low occupational positions. The process of occupational mobility differs depending upon whether this occurs within a particular organization or involves a change of employer. Job mobility within well-defined career ladders (internal labour markets) as well as job mobility by changing employers (usually associated by voluntary job termination) implies the improvement of occupational position (Burdett, 1978; Oppenheimer and Kalmijn, 1995; Scherer, 2001). Though in this article I focus less on job mobility while in employment (within or between employer mobility), but on the effect of unemployment on different educational groups, I formulate expectation for between-job mobility.

Until 1970, there was a strong demand for low-educated skilled and semi-skilled workers and enough jobs for the unskilled. Since then, the UK economy has experienced the most dramatic decline of traditional industries among all OECD countries. In the period between 1970 and 2003, the share of manufacturing jobs declined monotonically from 35 percent to 15 percent (Rowthorn and Coutts, 2004). The dramatic decline in demand for unskilled and low-skilled workers reduced demand for self-binding commitments by employers towards low-educated entrants, and employers are reluctant to invest in low-educated employees (Breen, 1997). Thus it is unlikely that low-educated workers will be able to improve their positions by changing employer. It is higher-educated workers in particular who profit from belated utilization of their credentials despite non-optimal entry (Scherer, 2004).

What happens after job loss? In line with *human capital theory*, studies for liberal countries report high wage penalties (about 10–20%) upon job re-entry (Arulampalam, 2001; Gangl, 2006). The losses in earnings are mainly explained by the devaluation of *job-specific skills* when changing firms. Thus, unemployment scarring is particularly relevant for wage losses of high-tenure workers with a large stock of firm-specific human capital. However, at the beginning of the employment career, wage losses due to devaluation of firm-specific human capital should be moderate, since in the UK many employees start in transitory jobs in which they cannot accumulate much job-specific human capital. Gregory and Jukes (2001) report that in the UK high-educated workers in their middle and later careers suffer the most losses compared to the control group (10–18% for qualification and about 17% for those older than 36). In contrast, the authors find that the scar effect for workers at the beginning of the employment career is small or even negligible. In contrast to specific human capital, general human capital is more easily transferable across firms and is mainly acquired through formal education. Thus, when comparing the high- and low-educated who become unemployed, we can expect the high-educated to be in a better position, since their broad academic skills make them less dependent on the accumulation of job-specific skills, at least at the beginning of their employment careers. Furthermore, high-educated job-seekers only compete with individuals from the same educational level. In a labour market with an ample supply of labour, the low-educated are crowded out by the high-educated down to the end of the job queue, with very little chance of getting a job as a

consequence (Thurow, 1975). Bearing in mind that the decreasing demand for unskilled and low-skilled labour created an oversupply of low-educated workers, these workers might face long-term unemployment and are unlikely to improve their occupational positions on leaving their job.

Signalling theory is often applied to explain post-unemployment wage losses. Lacking information on the productivity of a prospective employee, employers seek signals that convey information on the job applicant (Gibbons and Katz, 1991). A *(prolonged) unemployment phase* is seen as providing employers with a *signal of low productivity*. However, EPL in the UK is weak and low occupational positions at the beginning of the employment career are part of an ongoing relocation process; the stigmatization of unemployed workers should be less pronounced than in labour markets with strict EPL. Studies on the entrapment hypothesis illustrate that less tightly regulated and segmented markets lead to a lower risk of being entrapped in lower status positions than in less regulated labour markets (Scherer, 2004). High-educated individuals looking for jobs are aware of their productivity and tend therefore not to take the first available job. Those high-productivity workers who had good jobs prior to unemployment are also more likely to be recalled by their former employers or may choose to remain unemployed rather than to accept less prestigious and low-wage jobs (Gibbons and Katz, 1991). Rodriguez-Planas (2004) found that *highly* productive laid-off workers *choose* unemployment over a low-paid job as a means of *signalling* their productivity. Thus, a prolonged unemployment spell for high-educated workers might be interpreted by employers as an indicator of an employee's high aspiration level. Hence, high-educated workers might be less susceptible to status losses upon re-entering the labour market.

The human capital approach and signalling models have been challenged on the basis of *search and matching theories via unemployment* (Kahn and Low, 1982; Jovanovic, 1984). Though there are good reasons for believing that unemployment is not the best choice for improving occupational position, according to Kahn and Low (1982) the reasons for high rewards when searching off-the-job is high job search intensity that provides job searches with higher numbers of job offers than for those searching on-the-job. These authors also argue that previous attempts to estimate on-the-job and off-the-job search have suffered due to a selectivity problem. Those who search on-the-job might have unobserved characteristics that raise the search returns compared to the off-the-job search. After they controlled for unobservables they found that an off-the-job search brings about 10 percent more rewards than searching on-the-job. There are also a series of studies for liberal countries that support this view (Abbring et al., 1998; Antel, 1991). However, it has to be borne in mind that these arguments are only applicable in institutional contexts such as in the UK. The weak linkage between the educational and employment systems and the emphasis on formal education lead to young people starting in low occupational positions. When employment relationships are terminated by the employee (or by mutual agreement) because of a poor match quality, the next job might improve the job match. In such a scenario, off-the-job search might be used as an active phase to improve occupational position. Weak EPL generates high levels of turnover and job mobility. It implies a higher number of vacancies on the labour market. At the same time, because of high turnover on the labour market, unemployment might be less stigmatizing than in a rigid labour market. Recent studies emphasize that prolonged searching for work is rewarded with a better job (Boheim and Taylor, 2000; Gangl, 2002a). However, the job search period depends on the aspiration of job searchers that reflects their productivity and opportunity costs of the job search (McCall, 1970). Given that higher educated workers with their general skills are more appreciated on the labour market than low-educated people (Breen, 1997) and that they are aware of their productivity, they will reject job offers that fall short of their expectations and remain unemployed. At the same time high-educated workers have more chance of coping with opportunity costs: they receive higher unemployment benefits and profit from savings from previous salaries. Furthermore, they are more likely to experience financial support from their spouses and/or family. In contrast, low-educated workers have to deal with the high opportunity costs of the job search because of their low allocation of financial resources. High financial pressure to finding a job lowers the aspiration to find a better job position.

In the following I summarize theoretical considerations and formulate hypotheses: because of the transitory character (stop-gap jobs) of early careers in the UK, many entrants start their careers in

over-qualified positions. An unemployment phase can be used to search for a better job match. I argue that the mechanisms lying behind the unemployment state vary for different educational groups: the high-educated are pulled, while the less-educated are pushed, into the labour market. The sequential nature of job offers causes job searchers either to accept a job offer immediately or to wait for the next job offer. High-educated workers are aware of their productivity and have high expectations towards the occupational position of the next job. Higher previous salaries and savings, higher unemployment benefits from previous gross salaries and higher household incomes allow the high-educated to cope with opportunity costs arising from the job search. High-educated workers might also *choose* unemployment over a low-paid job as a means of *signalling* their productivity. Thus, waiting for a better job offer might be a good strategy by which to improve their occupational positions. In contrast, the low-educated are positioned at the bottom of the job queue and an ample supply of unskilled and low-skilled labour reduces their chances of receiving a 'good' position. Thus, waiting for a better job offer might not be the best strategy, as such an offer will probably not be received. Furthermore, the low unemployment benefits from previous salaries, the sanction regime for the right to receive unemployment benefits and low household incomes do not buffer the opportunity searching costs, forcing the low-educated to reduce their job aspirations. Fewer job offers and economic pressure *push* the low-educated unemployed into the labour market. Furthermore, a prolonged job search is interpreted by employers not as a signal of their high aspirations, but of their unemployability.

Taking into account these considerations, I derive the following two hypotheses.

H1a: In line with search and matching models I expect that the *incidence of unemployment* for high-educated people will improve their occupational status compared to the high-educated who have not yet experienced a phase of unemployment.

H1b: In contrast, following the human and signalling models I expect that the *incidence of unemployment* for low-educated workers should have a negative impact on their occupational status when compared to the control group (those without a gap in unemployment).

H2a: In accordance with search and matching models, the *prolonged job search* for high-educated workers is likely to improve their re-entry status and subsequent career path.

H2b: In contrast to the high-educated, the low-educated workers are pushed into the labour market and a *prolonged job search* by low-educated workers is interpreted by employers not as a signal of their high aspirations, but of their low productivity. Thus, I expect that compared to the low-educated workers high-educated workers profit from the prolonged job search.

Data and methods

Data

The data used in this study come from the BHPS, which began in September 1991. Fourteen yearly waves are available, providing information on education, income and payment, and a considerable amount of information on other individual issues. Additionally, retrospective data supplement the panel data (Halpin, 2000). The analysis is based on labour market entrants aged 16–28 (when entering the labour market) who left the educational or the vocational system between 1980 and 2007. I construct a dataset using information from the panel and retrospective data. For the retrospective data I use occupational information on the spell level and for the panel data on the yearly basis. Though on average I have more employment episodes per person for the panel data than for the retrospective data, linear growth curve models can cope well with unbalanced data. I decided to measure mobility with a Socio-Economic Index of Occupational Status (ISEI) and not by hourly wage for several reasons (ISEI scale; see Ganzeboom and Treiman, 1996).[1] First of all, while wage growth at the beginning of the employment career is a 'natural' phenomenon in the UK (as well as in other countries), the occupational status measured in the ISEI score reflects the improvement of occupational positions. Second, the retrospective data do not include wage information, which leaves us with low case numbers (especially for

high-educated individuals). Third, not all employment episodes in the BHPS sample contain working hours, which makes reconstruction of the hourly gross wage a difficult task. The observational window of early careers is confined to the 10 years after leaving the educational system. The final sample includes about 3,000 individuals.

Methods

The methods used in this study are survival analysis and linear growth curve models. Survival analysis for the transition from the first period of employment into unemployment and the transition from unemployment into re-employment will shed light on the risks of becoming unemployed and on the chances of re-gaining employment in different educational groups (Blossfeld et al., 2007). I will parameterize time as accelerated failure time metric (AFT). An attractive feature of AFT models is that they allow the modelling of non-monotonic hazard functions and from previous research it can be assumed that the hazard function for unemployment is bell-shaped (Dolton and O'Neill, 1996a). These models also allow the *effect of covariates to vary over time* when introducing covariates as a *shape* parameter (Cleves et al., 2002). Strictly speaking, there is no proportional hazard interpretation for AFT models since they are not reducible to the form $h(t|x_j) = exp(\beta_0)exp(x_j\beta_x) = h_0(t)exp(x_j\beta_x)$, where $h_0(t)$ is a baseline and $exp(x_j\beta_x)$ are exponential linear predictors. However, hazard can be derived as $h(t|x_j) = -\frac{d}{dt}S(t|x_j)/S(t|x_j)$. For reasons of convenience, however, the AFT models are interpreted as hazard models, though the reader should remember that coefficients of AFT models are the same but have reversed signs.

In order to estimate entry status and the status growth of the pre-unemployment phase as well as re-entry status and status growth of the post-unemployment phase I use linear growth curve models, which are an appropriate method for treating Gaussian repeated correlated outcomes (Verbeke and Molenberghs, 2000).[2] Including periods of unemployment, I estimate losses/gains for each educational group upon re-entering the labour market relative to those who have not experienced unemployment. Because of employment career interruptions, it is highly unrealistic to assume that individual change trajectories are continuous functions of time. Unemployment interruptions might shift the level as well as the growth of occupational status. For this reason, I model occupational status growth before and after unemployment phases separately but in the same model. Note that occupational status growth is only modelled for the first unemployment spell. More detailed model specification is introduced in Appendix I. Note that I also control for employment interruption other than through unemployment: duration of full-time education and duration of economic inactivity (maternity leave, house-wife and the rest category). The states are based on categories defined by the International Labour Office (ILO). It is also important to control for the reasons for leaving a job (made redundant, voluntary, dismissed, temporary contract ended). To compare job mobility via unemployment with the stayers I also introduce employer change as a metric variable. The models deal with unbalanced data that cover on average seven years of employment.

Besides the covariates described above, the following covariates are included in the analysis: (1) region (four regions created from twelve official regions: North, South, Middle, Scotland), (2) sex, (3) education based on formal educational achievements (primary education with and without vocational qualification, O-Level, A-Level, lower tertiary and higher tertiary education),[3] (4) regional youth unemployment rate (younger than 25 years old), (5) full-time vs. part-time (part-time less than 35 hours a week), (6) employee vs. self-employee, (7) permanent vs. temporary job, (8) branch of industry based on Singelmann (1978) classification (extractive, transformative, producer services, distributive services, personal services and social services), (9) dummy variables for labour market entry cohorts (1985–1989, 1990–1994, 1995–1999, 2000–2004). Additionally, for linear growth curve models, I introduced a covariate for the duration in employment before the re-employment phase and a set of covariates that gives information about the inactivity spell: duration of full-time education and duration of economic inactivity.[4]

Table 1. Risk of unemployment and chances of re-employment (log-logistic transition rate model). BHPS (1980–2007)

		Model 2[b] Chances of re-employment	
	Model 1[a] Risk of unemployment	Scale parameter	Shape parameter
Education (ref. Primary without vocational qualification)			
Primary with vocational qualification	0.76***	–0.53**	–0.10
O-level	0.90***	–0.36***	–0.22***
A-level	1.10***	–0.42***	–0.11
Lower tertiary	1.06***	–0.59***	–0.39**
Higher tertiary	1.54***	–0.46***	–0.41***
Reason for leaving previous job (ref. Made redundant)			
Voluntary job termination		–0.29**	
Other reasons		0.10	
Dismissed		–0.27	
Temporary contract finished		–0.25*	
Women	0.28**	0.08	0.12*
Constant (scale parameter)	0.65***	2.42***	
Constant (shape parameter)	0.11***		–0.23***
Subjects	2928		984
Failure	989		765
Log-likelihood	–2556.70		–1343.37

Notes: *$p<0.10$; **$p<0.05$; ***$p<0.01$.

[a]Full set of control variables for Model 1: dummy variables for cohorts (1985–1989, 1990–1994, 1995–1999, 2000–2007), duration of job search (before first job), full-time vs. part-time job, self-employed, permanent vs. temporary contract, branch of industry, regional youth unemployment rate, dummy variables for regions.

[b]Full set of control variables for Model 2 as in Model 1. Additional variables in scale parameter: duration in first employment. Additional variables in shape parameter: variables for cohorts (1985–1989, 1990–1994, 1995–1999, 2000–2007).

Empirical results

Before returning to the main issue, the risk of becoming unemployed and the chances of re-gaining employment are analysed for different educational groups. In the second step, I discuss the impact of unemployment on the subsequent career.

Risk of unemployment and re-entry chances in employment

The risk of unemployment largely depends on educational endowments (Model 1, Table 1). Model 1 is restricted to the variables of the scale parameter model because the variables in shape parameter do not improve the data fit. Higher tertiary, lower tertiary and A-Level education reduce the risk of becoming unemployed. Note that in contrast to hazard models coefficients of AFT models have reversed signs.

Model 2 sheds light on the chances of leaving unemployment for different educational groups. The log-logistic regression model provides the best fit for the data among parametric models. All gamma coefficients in the shape parameter are less than 1, which means that the chances of becoming re-employed first increase and then decrease.[5]

According to Model 2, higher education guarantees better chances of re-integration into the labour market. To gain a better understanding of the re-employment process, I plotted the hazard rate and survival probabilities (Figure 1). The hazard rate for employees with tertiary education reaches a peak during the third month in unemployment, while the hazard rate for employees with primary education peaks in the sixth month of unemployment. The predicted hazard rate for the group with the lowest

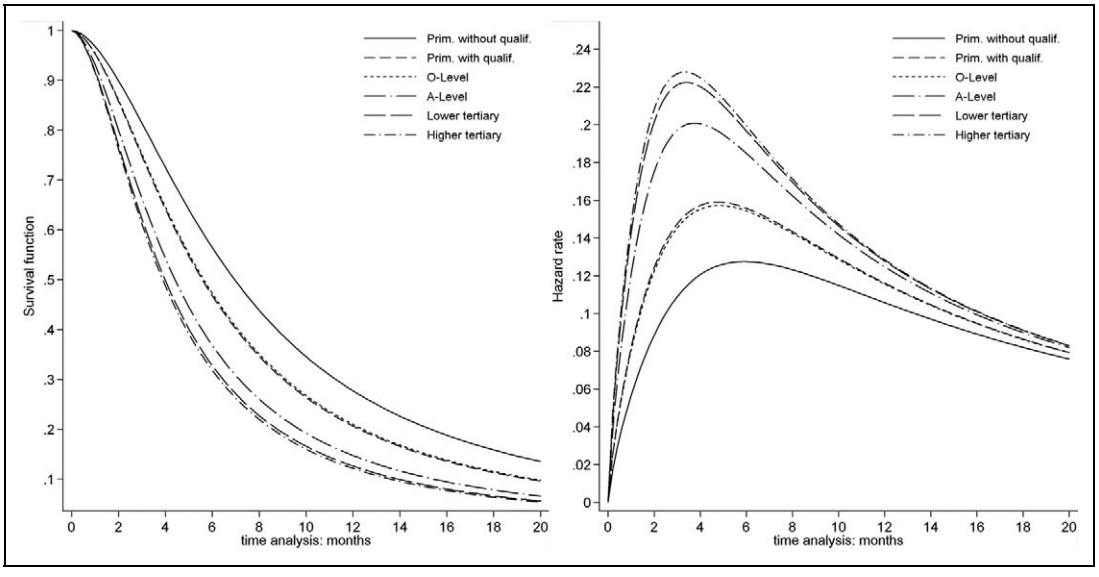

Figure 1. Predicted survivor function and hazard rate for re-employment by education

education level coincides with the month when the allowance for unemployment benefits expires. Indeed, Dolton and O'Neill (1996b) report that invitations for the 'RESTART' programme interview coincide with re-integration in any job (which includes short-term, temporary and part-time jobs), but the programme fails to re-integrate workers in solid jobs. Referring to previous research, I interpret my results in terms of there being few chances for low-educated workers of finding a good job during the first months of unemployment, which means they must wait until unemployment benefits expire. These results provide the first evidence for the H2b hypothesis that the low-educated are pushed into disadvantageous jobs in the UK. In contrast, the high-educated entrants display higher transition rates upon re-entering the labour market, which indicates that they find a better job before unemployment benefits expire.

In addition to the scale parameter, I also introduced the shape parameter gamma for educational groups (but also for cohorts and gender) allowing the effect of covariates to vary over time. Higher education and O-Levels have an accelerating effect on re-entry into employment (shape parameter gamma in Model 2). This means that high-educated entrants not only perform better at the beginning of the job search (scale parameter); their chances of re-employment also improve over time compared to the lowest educational group. Low-educated employees who fail to find a job in the first months of unemployment face the risk of becoming long-term unemployed.

The next set of dummy variables controls for the reasons for leaving the last job. According to Model 2, when the worker leaves voluntarily or a temporary contract has come to an end, re-integration into the labour market is quicker than it is when made redundant. Finally, women are less likely to lose their job than men (Model 1). While at the beginning of job search processes the chances of finding a job are equal for men and women (scale parameter), with increasing duration in unemployment women perform less well than men (shape parameter) (Model 2).

Employment career

In the first part of this section, the impact of educational achievements on the pre-unemployment phase is investigated. This discussion provides a background for understanding the second area of focus, the post-unemployment phase. Since this article focuses mainly on the scar effect after the unemployment phase, the results for the pre-unemployment phase are discussed only briefly.

Pre-unemployment career. Even though the institutional link between the educational and employment systems in the UK is weak, better-educated entrants start their first jobs in *much* better positions than low-educated persons (Model 1, Table 2). All in all, these results confirm the human capital theory: the longer students invest in their education, the higher status they will achieve.

As argued above, employers are reluctant to invest in on-the-job training for lower-skilled workers and instead prefer to invest in well-educated workers. Owing to weak links between the educational and employment systems, many entrants with tertiary education start their first job in inadequate positions. Nonetheless, they have good prospects of working their way up either by staying with the same employer or by changing employers. Keeping in mind that the ISEI refers to occupational status, the results support our argumentation. Better-educated entrants holding tertiary, A-Levels and O-Levels are able to improve their occupational status (status growth time 1) (Model 1). Entrants holding only primary degrees (with or without vocational qualification) display no status rewards after they enter the labour market. I also introduced a variable (as metric variable) reflecting the change of employer and interacted this variable with educational achievements. Only the best qualified (tertiary education) improve their positions with each employer change (results not shown).[6] Women start in higher occupational positions (1.5 points) than men and there are no differences in status growth (model not shown).

The series of dummy covariates for the *last job* before becoming unemployed confirms our considerations in the method section: individuals in their last job prior to unemployment already perform less well than those who do not become unemployed (Table 2, Model 1). Note that the reference category of each educational group corresponds to the respective educational group of the non-unemployment group. O-Level, A-Level, lower and higher tertiary educational groups perform less well compared to the respective educational groups who are still in employment.

Post-unemployment career. In previous models, initial status and status growth were the subjects of investigation, but what happens when employees lose their jobs? In this section, the main focus is on two issues comparing different educational groups. First, I investigate whether there is a scar effect of an *unemployment incidence.* Second, I ask what impact the *duration of unemployment* has on re-entry status for different educational groups.

In Model 2 (Table 2), I introduce the set of dummy covariates reflecting occupational status after the *first post-unemployment job* for different educational groups. Unemployed individuals with primary education without vocational qualifications, O-Level and A-Level display a lower re-entry status than those who have not yet experienced an unemployment phase.[7] Thus, for lower qualified workers I can confirm the scar effect hypotheses (H1b). In contrast, for high-educated workers unemployment seems to serve as a bridge to finding a higher status job (H1a). Those with higher tertiary education catch up in status with those without an unemployment spell upon re-entry into employment (the coefficient is small and not significant). For those with lower tertiary education, unemployment is not just a bridge but a trampoline towards a better job: employees with lower tertiary education gain 2.78 points compared to those who have not yet had an unemployment episode. It should be borne in mind that initial job mismatches are more common among high-skilled individuals, who are also faster in recovering the initial mismatches.

Additionally, I introduced slope effects (status growth after unemployment) for educational achievements after the unemployment phase. None of the educational groups have higher growth rates compared to the control groups (results not shown). For post-unemployment career I also introduced interaction variables between education and labour market experience prior to unemployment. Employment experience has only a negative effect on status at re-entry for individuals with primary education whether with or without vocational qualifications (Model 2). As argued in the theoretical section, the lack of a broad academic education makes job-specific skills an important component of the human capital of low-educated workers. Thus, long tenure before unemployment reflects job-specific skills and therefore the interruption of job tenures penalizes low-educated workers in particular. I also introduced dummies for the reasons of leaving the last job before becoming unemployed (coefficients not shown). Voluntary job termination has a positive and significant effect on tertiary education.

Table 2. Estimation results for pre- and post-unemployment careers (random intercept and random slope model). BHPS (1980–2007)

	Model 1	Model 2	Model 3
Pre-unemployment phase			
Constant	30.44***	30.43***	30.42***
First Job (ref. Primary without vocational qualification)			
Primary with vocational qualification.	2.56**	2.41**	2.76**
O-Level	5.09***	5.05***	5.31***
A-Level	9.06***	8.98***	9.72***
Lower tertiary	17.73***	17.52***	19.88***
Higher tertiary	25.42***	25.31***	28.06***
Last job (for those who will become unemployed)			
Primary without vocational qualification.	−0.33	0.14	−0.05
Primary with vocational qualification.	−0.65	−0.84	−0.51
O-Level	−1.29***	−1.00***	−1.10*
A-Level	−1.46***	−1.07***	−1.19*
Lower tertiary	−3.11***	−3.81***	−3.32***
Higher tertiary	−2.52***	−2.44***	−2.69***
Status growth 1			
Constant for status growth (time 1)	−0.00	0.00	0.01
Primary without vocational qualification. (ref.)			
Primary with vocational qualification.	−0.00	−0.01	−0.03
O-Level	0.03***	0.03**	0.04***
A-Level	0.05***	0.04***	0.04***
Lower tertiary	0.07**	0.06***	0.04***
Higher tertiary	0.07***	0.07***	0.05***
Post-unemployment phase (for those with unemployment spell)			
Status shift after unemployment			
First post-unemployment job in Model 2/Duration of unemployment in Model 3			
Primary without vocational qualification.		−1.66**	−0.16
Primary with vocational qualification.		0.02	−0.09
O-Level		−1.12**	−0.12
A-Level		−1.52***	−0.26
Lower tertiary		2.78***	0.25*
Higher tertiary		0.02	0.16
Employment experience (prior to unemployment)			
Primary without vocational qualification.		−0.04***	−0.04***
Primary with vocational qualification.		−0.06*	−0.05*
O-Level		0.00	−0.00
A-Level		0.00	−0.00
Lower tertiary		−0.02	−0.02
Higher tertiary		−0.02	−0.01
Status growth after unemployment			
Constant for status growth (time2)	0.02**	0.03*	−0.00
Number of subjects	2928	2928	2928
Log likelihood	−67323.94	−67259.20	−67215.68

Notes: *$p<0.10$; **$p<0.05$; ***$p<0.01$. Full set of variables (intercept): dummy variables for cohorts (1985–1989, 1990–1994, 1995–1999, 2000–2007), sex, full-time vs. part-time job, self-employed, panel vs. retrospective data, permanent vs. temporary contract, branch of industry, regional youth unemployment rate, dummy variables for regions, reasons for leaving pre-unemployment job, employment interruptions (duration in full-time education and duration in economic inactivity). Full set of variables (slope 1): dummies for cohorts, sex, full-time vs. part-time, self-employed, permanent vs. temporary, dummy variables for cohorts, employment interruptions (duration in full-time education and duration in economic inactivity).

As argued in the Introduction, for highly-educated persons a prolonged job search might be a better strategy than it would be for low-qualified individuals. To test this hypothesis (H2b) I introduced unemployment duration in Model 3 (instead of incidence of unemployment as in Model 2). The results support my line of argumentation: with every month spent searching for a job, employees improve their occupational status by 0.25/0.16 points. In contrast, low-educated workers lose in status with each month of unemployment (though not significantly).

Summary and discussion

In this study I have investigated the early careers of workers in the UK, focusing on the effect of unemployment on the subsequent employment careers of different educational groups. Embedding my expectations within the institutional context of the UK I argued that the mechanisms behind indirect job mobility differ between groups with different educational achievements.

In an institutional regime of an uncoordinated market economy, and with weak linkage between the educational and the employment systems, poor job allocations are a widespread phenomenon. Many poorly allocated workers might improve their position via an episode of unemployment. However, unemployment has a different impact on the post-unemployment career of different educational groups. The sequential nature of job offers for the high-educated allows them to wait for attractive job offers. As I have argued, due to their higher previous salaries and savings, high-educated entrants are also under less economic pressure to accept the first available job than are low-educated workers. Furthermore, high-educated workers do not compete with low-educated workers and thus do not take the first available job they are offered. In contrast, fewer job offers, competition with the better educated, low replacement rates for previous gross salaries, the sanction regime for the right to unemployment benefits and low household incomes push low-educated workers into taking the first available job offer. Results confirm our expectations: individuals holding tertiary degrees catch up in status with the control group upon re-entering the labour market. No other educational group improves its occupational status compared to the control group. A prolonged phase of job searching for people with tertiary degrees has a positive effect on their re-entry positions, whereas a long job-searching phase penalizes low-educated people. Furthermore, employment experience prior to unemployment only has a negative effect on the subsequent status of low-educated individuals, which indicates the importance of specific human capital for low-educated workers.

Summarizing the results it becomes evident that labour market theories in the UK institutional context mean different things to different educational groups. While search and matching theories are appropriate for explaining the future outcomes for indirect job mobility of high-educated people, they fail to predict outcomes of low-educated workers. Devaluation of specific human capital and the stigma attached to unemployment provide a better framework for explaining status losses for low-educated people after the unemployment phase.

Appendix I

I use an interrupted time series (ITS) design with a non-equivalent control group. ITS design allows for a model starting occupational positions and growth of occupational status before the unemployment phase and the re-starting occupational status and occupational growth after the unemployment phase (for introduction, see Singer and Willet, 2003). Furthermore, by using an additional control group (non-equivalent control group) I can estimate the differences between the control and the treatment group (unemployed) before and after the unemployment phase.[8] The main advantage of ITS design for my study is that it can be used with growth curve models. Using ITS design, I only model discontinuity interruption of the first unemployment spell. In principle, I can go on to model the third and fourth post-unemployment phases. I run out of cases, however, especially for those with higher education because only a few of them become unemployed in our research window.

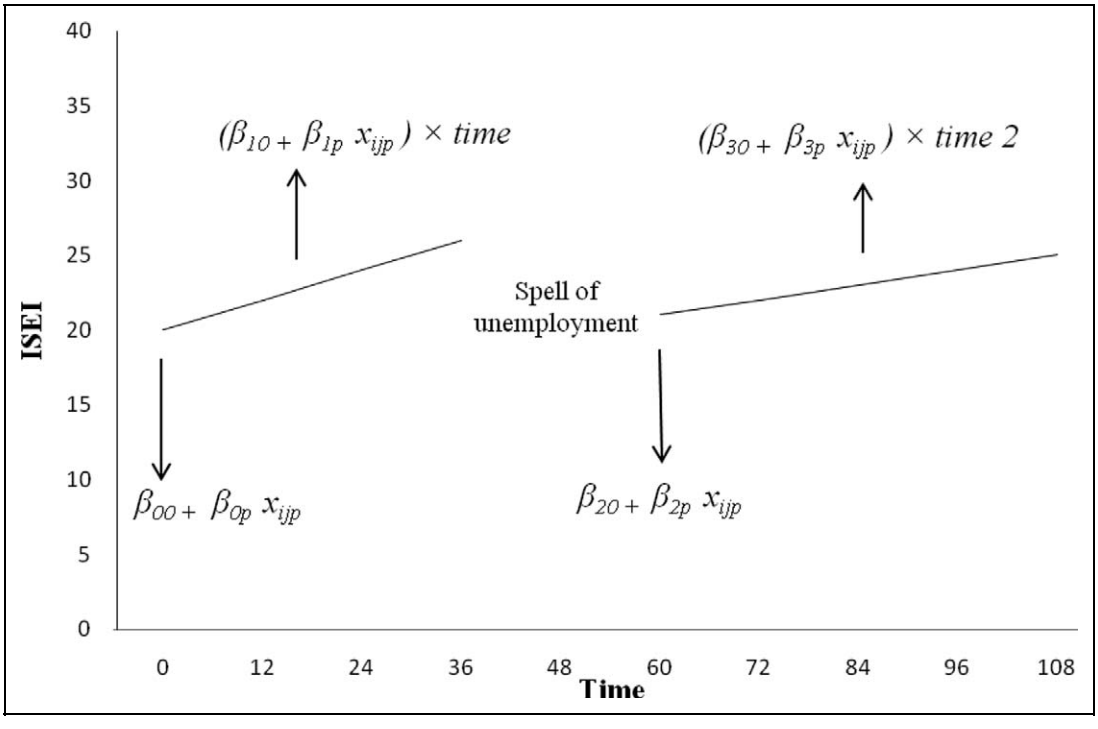

Figure 2. Occupational status and occupational status growth before and after unemployment spell

For the intercept (entry/re-entry status) and slope (status growth) models in the pre- and post-unemployment phases with i^{th} subject at the j^{th} measurement occasion and depending on x^{th} covariate, I use the following model specification:

$$\begin{aligned} Y_{ij} = &\left(\beta_{00} + \beta_{01}x_{ij1} + \beta_{02}x_{ij2} + \ldots + \beta_{0p}x_{ijp} + b_{0i}\right) \\ &+ \left(\left(\beta_{10} + \beta_{11}x_{ij1} + \beta_{12}x_{ij2} + \ldots + \beta_{1p}x_{ijp} + b_{1i}\right) \times time1\right) \\ &+ \left(\left(\beta_{20} + \beta_{21}x_{ij1} + \beta_{22}x_{ij2} + \ldots + \beta_{2p}x_{ijp} + b_{2i}\right) \times T\right) \\ &+ \left(\left(\beta_{30} + \beta_{31}x_{ij1} + \beta_{32}x_{ij2} + \ldots + \beta_{3p}x_{ijp} + b_{3i}\right) \times time2\right) \times T + \varepsilon_{ij} \end{aligned} \quad (1)$$

Figure 2 helps to clarify the model specification by demonstrating an imaginary person with 24 months of unemployment. The baseline parameter β_{00} and parameters β_{0p} associated with covariates x_{ijp} stand for the *occupational status* in the first job. Parameter β_{10} and parameters with the corresponding variables $\beta_{1_p}x_{ijp}$ are the *status growth for the pre-unemployment phase.* Because unemployment might shift the re-entry status and post-unemployment slope, the phase of unemployment needs to be modelled separately. Covariate T stands for the treatment effect (unemployment) and might be a dummy (incidence of unemployment) or a continuous variable (duration of unemployment). Parameter β_{20} and parameters with the corresponding variables $\beta_{2p}x_{ijp}$ reflect the jump or drop *in status after re-entry into the labour market.* To capture discontinuity in the post-unemployment slope, I introduced an additional parameter $\beta_{30} \times time2$ depending on the parameters with covariates $\beta_{3p}x_{ijp}$. Since I hypothesize that the post-unemployment phase has a strong impact on the later employment career, covariate *time2* clocks the starting point at 0 with a separate parameter β_{30}. Hierarchical model specification (1) has two random effects (b_{0i} and b_{1i}) for the pre-unemployment phase and two (b_{2i} and b_{3i}) for the post-unemployment

phase. Random intercepts and random slope effects are assumed to be normally distributed with the mean 0 and variances σ^2_0, σ^2_1, σ^2_2 and σ^2_3. Since I have unbalanced data, I use a 4 x 4 unstructured covariance matrix. Measurement error ε_{ij} is assumed to be independent of random effects (b_i) and normally distributed. In my models I also control for other states of inactivity (further education and other states) but do not report results. For individuals who did not experience an unemployment spell (T=0) in the research window the model specification (1) boils down to two parameters β_{0p} and β_{1p}.

$$\begin{aligned} Y_{ij} = &\left(\beta_{00} + \beta_{01}x_{ij1} + \beta_{02}x_{ij2} + \ldots + \beta_{0p}x_{ijp} + b_{0i}\right) \\ &\left(\left(\beta_{10} + \beta_{11}x_{ij1} + \beta_{12}x_{ij2} + \ldots + \beta_{1p}x_{ijp} + b_{1i}\right) \times time1\right) + \varepsilon_{ij} \end{aligned} \tag{2}$$

Acknowledgement

I thank Professor Dr. Hans-Peter Blossfeld and Professor Dr. Karin Kurz for their comments on previous versions of this article and I acknowledge the ECASS programme funding scholarship at the Institute for Social and Economic Research (ISER) in Essex.

Notes

1. Status scores are assigned to occupational titles (on the basis of information from the ISCO-88 classification) in accordance with a scale ranging from 16 for occupations with the lowest status to 90 for occupations with the highest status.
2. Based on the maximum likelihood method, growth curve models yield valid estimates in the instance of unbalanced and missing data under the missing random (MAR) assumption (Fitzmaurice et al., 2004).
3. Because of low numbers of cases for some educational groups, I constructed educational groups using formal educational achievements. I decided to collapse educational groups according to the formal educational achievements because in the UK the employers' preferences for formal educational achievements prevail over vocational achievements. However, since the differences are more pronounced between primary education with and without vocational training and in terms of ISEI score in the first job (own calculation), I treat primary education with and without vocational training separately (Brauns et al., 1999). My end sample consists of 502 cases with primary education and without vocational training, 127 cases with primary education and vocational training, 871 cases with O-Level (with and without vocational training), 890 cases with A-Level (with and without vocational training), 320 cases with lower tertiary education and 219 cases with high tertiary education.
4. The mean and standard deviations for covariates in the sample are available upon request.
5. To avoid misspecification of the model, I also fitted a piecewise constant exponential model (not shown), which provides downwards biased coefficients: the Bayesian information criterion (BIC) for the log-logistic model is 94 times lower than for the piecewise constant exponential model, which provides the best fit for the data.
6. Note that the coefficients in questions do not change after the introduction of direct job mobility covariates.
7. Note how the post-unemployment coefficients are interpreted compared to the stayers; they should be interpreted irrespective of the pre-unemployment coefficients (last job for those who will become unemployed). To calculate the absolute gains/losses for each educational group, the last job coefficient should be subtracted from the post-unemployment coefficients. For example, for lower tertiary education the status gains amount to $2.78 - (-3.81) = 6.59$ points on the ISEI scale.
8. Note that I could also calculate the average treatment effect. However, the aim of this study was to estimate the relative occupational standing of unemployed people before and after the unemployment phase relative to a control group and not to estimate the average treatment effect.

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